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A HUEBCORE PUBLICATION

PurchasingWorld®

MANAGING THE BUSINESS OF BUYING

JANUARY 1991

CONFIDENTIAL

1991 FORECAST

The Economic Summit

Macro overview
*
Price expectations
*
Industry projections
*
Econometric models
*
International arena

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MRO buying

Beaudet on business issues

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PurchasingWorld

Welcome — Gene

You and I are in for a treat each and every month. Starting with this issue, Gene Beaudet will bring his unique perspective to bear on the issues facing us, our companies, and the purchasing profession each and every business day.

Gene's column—*The Business Issues*—is the hallmark of a career that has spanned 40 years and earned recognition from government, industry, and his publishing peers.

It is not an exaggeration to call Gene the dean of U.S. business journalists. He has been honored with the prestigious C.D. Crain Jr. Award given annually since 1967 to an individual for a lifetime achievement in the business press by the American Business Press.

Throughout his career, Gene has brought an uncommon ability to see through the gobbledygook of government bureaucracy as it attempts to stifle our free enterprise system. He has stood by his principles and communicated them clearly and forcefully on every topic of importance to U.S. manufacturing companies. For this he has received the Flick-Reedy Americanism Award and had his writings reprinted in the Congressional Record.

Gene looks back with some pride to the days on Iron Age magazine where he provided editorial leadership that earned six coveted Jesse H. Neal Awards for editorial excellence and countless other awards.

One association from his long tenure as editor-in-chief of Iron Age is being renewed with his joining PurchasingWorld magazine. Gene says it best:

"I've known and worked with HUEBCORE Communications' President Tom Corcoran for more years than either of us may care to admit—although, for me, every day I stay on the green side of the sod I count as a plus."

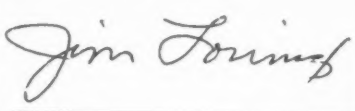
You'll find more than a little of that kind of wry humor in Gene's column. It's his style—one that subtly persuades us that his ideas are indeed important and worthy of serious consideration.

To many, Gene Beaudet represents the best that our tough, competitive publishing industry has to offer. You'll find that his views are refreshing, plain-speaking, and action oriented.

But they are always cloaked in the wit and wisdom of experience. If titles of some of his columns from the past are any indication of what we can expect, I'm sure we'll have a lot to think about and chuckle over. Here are a few gems: "A One-Way Ticket to Palookaville," "A Country of Hairdressers and Repairmen?" "Is the Flesh Willing But The Spirit Weak?" "The Adversary Complex Has Got to Go," and "Don't Just Do Something, Stand There!"

Tom Corcoran says: "Gene Beaudet is the voice of leadership for the metalworking/manufacturing industries. We couldn't be more pleased than to have him sharing his thoughts with our purchasing pros."

Good writing to you, Gene. Good reading for us.



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PW PREDICTS

The eve of destruction

As we begin the new year, it is unfortunate that the above title can initiate a discussion regarding our soldiers, who stand ready on Saddam Hussein's border, or the recent runup of oil prices, which might push our Fed-induced slow-growth economy into recession. In the long run, however, both of these dilemmas are dwarfed by the magnitude of destruction threatened by our government's loss of fiscal responsibility.

This loss of fiscal responsibility does not center upon the size of our Federal deficit or level of public debt, for these are merely symptoms of a much more dangerous disorder. The federal crisis I speak of deals with government's ever-increasing claim on resources.

While it is oftentimes fashionable for politicians, or those with little training in economics, to claim that any marketplace failure is sufficient reason for initiating remedial government intervention, the recent transformation in Eastern Europe (and the Soviet Union) provides convincing testimony as to why too much government is destructive.

Over two hundred years ago, the founding fathers provided our economic framework in the Constitution, which promoted the limited role of government in a capitalist society. Unfortunately, as democratic nations age, an inherent political bias toward bigger government begins to erode the magic of the free market.

Information costs make the political process very responsive to special interest groups. When politicians respond by providing large benefits to one targeted group, they impose a very small cost on everyone else in the economy. Unfortunately, the sum of the losses often outweighs the sum of the gains, but because the price to each loser is small, rarely is collective action for society's wellbeing undertaken. Aggravating the problem are the log-rolling activities politicians engage in to please their own constituents.

In the past 30 years, these two factors have combined to stimulate an ever-expanding role for government, which it has accomplished in a number of ways: direct purchases (on-budget spending); mandates on economic agents (laws); regulation compliance costs; Federal credit programs; transfer payments; tax expenditures and so on, all the way down to jawboning. Personal research indicates that our government's claim on resources has jumped from roughly 26% in 1970 to nearly 40% in 1990.

While the U.S. economic system is not perfect, it still provides a greater standard of living for its participants than any known alternative. Where there are shortcomings, economic theory would suggest that the cause is too much—rather than too little—government intrusion.

Despite this increase in central intervention, our economy remains subject to fluctuations in business activity which have been traditionally associated with capitalist societies.

Business cycles do not occur at regular time intervals, though they are reoccurring. In addition, the magnitude and duration of expansions and contractions are not the same, with many factors inducing changes from one stage to the other.

Our economy is now facing the very real possibility of moving from expansion into recession. Some analysts suggest that the Federal Reserve's strategy of slow growth has made the economy too weak to absorb the recent runup in oil prices brought about by the commotion in the Middle East. Others maintain that the downturn was inevitable due to excessively restrictive monetary policy, with the economy stagnating itself into recession. Whatever their argument, the number of economists *not* predicting recession dwindles every day.

Appreciating the fact that no single forecast can meet every decision-making situation, this issue of *PurchasingWorld*, in addition to its standard DataTrak and Predicts sections, reviews: the international arena; the econometric models of our country's leading consulting firms; the scenarios Data Resources Incorporated, purchasing experts and industry analysts believe most likely for both the economy and prices in 1991; and the expectations from four of the private sector's leading economists.

An ancient Chinese curse states, "May you live in interesting times." Such times are here. Despite the fact that we are now facing a significant slowing in business activity, this is not yet the eve of destruction.

By John W. Sheridan
Chief Economic Editor

Military markets adapting

Overview: Yes, it's true that defense spending is, in inflation-adjusted terms, likely to continue its downward tilt through the mid 1990s.

Demand: It's also true, however, that international economies and their respective political policies are undergoing extensive changes at a rapid pace. While this transformation has been quickly heralded by the media as an ending to the Cold War, implying that we can now mold our armed forces differently (reduce them), I would point out that the world is far from being a kinder and gentler place.

In fact, it might be more unstable than ever. The Soviet Union is in the midst of a transformation which quite easily could lead to civil revolt. With annual inflation estimated at 80%, a budget deficit approaching 20% of gross national product and a double-digit unemployment rate, economic chaos could force the Soviets to become very aggressive in their need for basic resources (i.e., food).

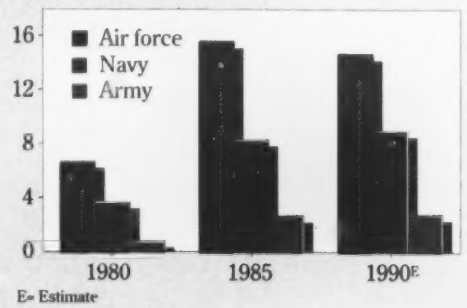
With respect to the rest of the world, a three-fold increase in the number of countries possessing nuclear weapons (to 15) is anticipated by the turn of the century, with leaders like Saddam Hussein at the controls.

Supply: The strategic nuclear triad (bombers, submarines and intercontinental ballistic missiles) will experience appropriation declines for the next five years. But, after the near-term slowdown offsets the spending acceleration which existed in the Reagan years, strategic outlays should return to a slow growth mode. Tactical outlays, however—assuming the U.S. continues its role as policeman of all the "Iraqs" in the world—should fare better.

Outlook: Military contractors in the aerospace industry will find the future leaner, and more difficult, especially with respect to their financial reports.

Defense procurement

Aircraft, billions of dollars



E= Estimate

Source: Aerospace Industries Association

CAD/CAM, CAE strong in 1990

Last year was a good one for the CAD/CAM, CAE (computer assisted design, manufacturing and engineering) industry. According to Daratech, Cambridge, MA, total sector revenue shot up 14% in 1990, with the three market leaders, IBM, Intergraph and Computervision, all experiencing double-digit growth.

The market leader, IBM Corporation, Armonk, NY, witnessed revenue growth of 18% in its CAD/CAM, CAE business (up 15% domestically and 20% abroad), largely because of continued dominance in the mainframe arena. This market will remain one of the strongest for growth in 1991, too.

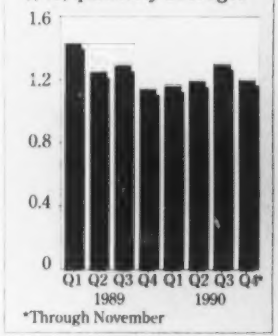
Recession drags red metal down

Production disruptions have been the explanation for the volatile and tight copper market. That's no longer the case, however, as the worldwide slowing of business activity, especially in the U.S., becomes the overriding fundamental in the price of copper.

When rebels forced the closing of the Bougainville Mine in 1989, 180,000 metric tons of copper per year was taken off the market. If this hadn't occurred, copper's price would already be below $1/lb, even assuming demand held solid. As it is, rising oil prices have made weak end-markets stagnate. Combined with 1991's anticipated increase in mine capacity, expected production rates and buildup of world inventories, the red metal's price is again forecast to head south of 90c/lb, before any sustainable pickup in demand occurs.

Copper

$/lb, quarterly averages



*Through November

Uncertainty curbs scrap exports

Iron and steel scrap exports have fallen significantly in the wake of the Middle East commotion. September's scrap export volume hit a 1990 low, with world demand; stagnated by uncertainty, expected to slide further. Ferrous shipments are up 8.2% on a year-ago basis, but much of that was due to strong demand from Turkey. A lot of Turkey's business ceased when Iraq invaded Kuwait. Higher freight costs and new supply from the Eastern European countries are also hurting domestic exports.

Mini-marts thriving

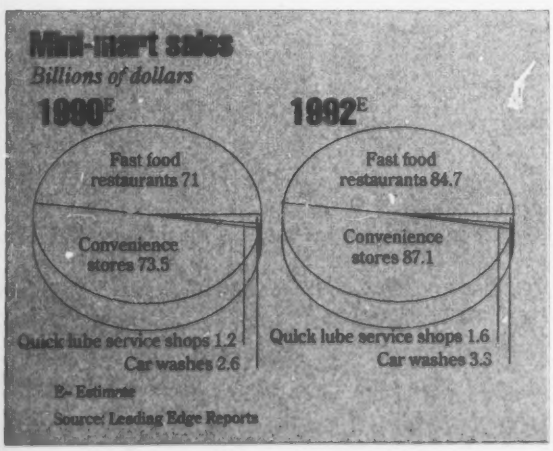
Overview: Mini-marts comprise convenience stores, fast food restaurants, quick oil change and lube service stations, and commercial carwash outlets. Combined, these segments have experienced yearly growth of 8.8% since 1987. In 1990, it is estimated that sales increased 8.6% for fast food restaurants, 8.8% for convenience stores, 14.6% for quick lube service shops and 13.7% for car washes.

Demand: American consumers have become the most time-conscious purchasers in the world. Inciting this change has been the rise in female labor participation and two-wage earner households. Except for brief lulls, gross national product is expected to continue its traditional climb, which translates into an upward trend for disposable personal income. Given that purchasing power keeps rising and the demand for convenience persists, consumption of mini-mart products and services should remain vigorous. Because customers pay a premium for convenience, however, the industry is not recession proof.

Supply: Quick oil change and lube service outlets represent the smallest segment of the mini-mart product group. This market segment is a direct outgrowth of previous oil crises, which brought about the rise of self-service gas stations and the abandonment of full-service facilities.

Over the next five years, the two smallest segments of the mini-mart market, quick oil change and lube service, and commercial carwashes, possess the greatest potential for growth. Slower growth is expected in the convenience store arena, while fast food restaurants should continue to do well, especially internationally.

Outlook: According to Leading Edge Reports, Cleveland, sales in the mini-mart market will grow 9% this year, and display average annual growth of 7.3% through 1995.



Aluminum strong in the '90s

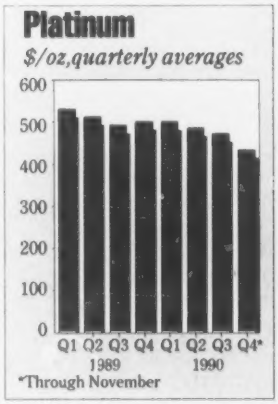
It appears that even the aluminum market is headed for a near-term slowing, but after the Iraqi crisis is resolved, the 1990s should see aluminum consumption moving up more than 2% annually.

One reason for the optimism is aluminum's use in automobiles. Following each of the previous oil shocks, auto engineers designed in more aluminum. In 1973, U.S. passenger cars on average used 81 lbs of aluminum. In 1990, the level had risen to an estimated 176 lbs per vehicle. By the turn of the century, analysts are predicting that domestic passenger cars will average 200-600 lbs of aluminum.

Also fueling optimism is beverage can demand, where aluminum shipments rose 6% in 1989 to 3.92 billion lbs, which accounts for 22% of the total industry. After coming in at 83 billion cans in 1989, Reynolds Metals is estimating 1990's level at 87 billion.

Platinum supply up, prices down

As much as 70,000 lbs of excess supply hit the platinum market last year, despite an uptick in demand of 3.4% to 3.6 million oz. Oversupply and weakening demand have worked to drag prices down to $412 a troy oz. While petroleum refining and petrochemicals are



increasing consumption, the general slowing of industrial activity (especially in autos, which has reduced the demand for catalytic converters), should keep the price of platinum between $400-450/oz through the first quarter. Rhodium ($4550/oz) and palladium ($92/oz) are also easing.

1-Meg tags firming

The dollar's recent decline against the yen will probably lead to an increase in the cost of one-megabit Japanese manufactured dynamic RAMs during the first quarter of 1991. Due to the 1986 U.S.-Japan Semiconductor Trade Agreement, all DRAMs made in Japan are subject to FMV (fair market value) pricing which is based on production costs. Because prices aren't allowed to fall below the FMV level and cost reductions in production aren't likely to offset the devalued dollar, expect DRAM prices to be moving higher.

Cotton better than ever

Overview: Cotton has firmly established itself on the consumer textile throng, and it doesn't appear that anything short of a supply shortage will keep it from making the 1990s a decade of further conquest.

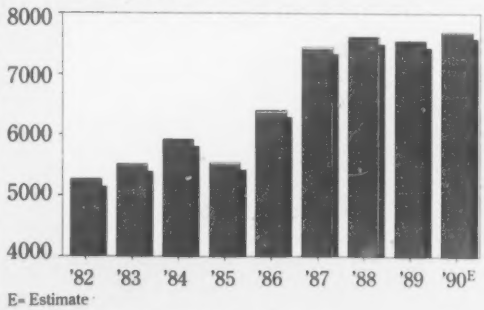
Demand: Excluding carpets, cotton now accounts for 50% of the consumer textile market. In fact, it's been roughly 20 years since U.S. textile mills have demanded this much cotton.

Cotton's market share hit an all-time low in 1975, when synthetic fibers were the craze. In 1984, the fiber still only commanded 41% of the market. In the second-half of the 1980s, however, the industry recognized a change in demographics: a significant portion of the populace valued the natural fiber. This awareness stimulated new advertising and promotion programs, as well as leading-edge product development. Together, these factors have allowed cotton to once again become America's most popular retail fiber.

Supply: Assuming no major shifts in consumer sentiment, only possible supply shortages threaten to slow cotton's domination of the textile market. The fact that cotton is a biological product and that it must be grown, means that the potential for demand to outpace supply exists, in the short run, because plantings are seasonal (spring) and crop size is limited. Shortages are especially a threat when demand continues to increase, while the carry-over between cotton crops is low, as it is now.

While the tightness in supply will begin to pressure prices higher until the next harvest, excess yarn production capacity will make it difficult for spinners to pass along higher raw material costs.

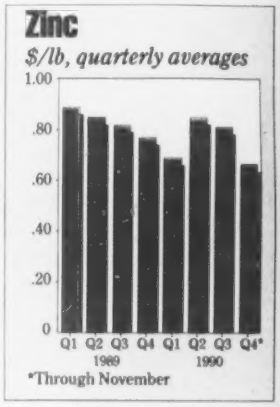
Outlook: Unless mother nature unexpectedly impedes future harvests, supply should keep pace with worldwide demand, which should continue its upward trend.



Box sales outlook strong

The Fibre Box Association reports that through September 1990, industry shipments of corrugated and solid fibre had advanced 0.6% on a year-ago basis, with containerboard consumption rising 2% over the same period.

According to The Freedonia Group, corrugated and solid fiber boxes will continue to be the mainstay of the box industry, displaying yearly growth of 6.3% through 1994. The Cleveland research firm believes that advances in printing technology, laminates and coatings, along with low cost and recyclability, will keep performance up in the corrugated and paperboard box industry, despite stiff competition from plastic packaging alternatives (shrink and stretch wraps, rigid plastic containers, blister packs and corrugated plastic boxes).



faces being galvanized. More competitive products (thin-wall die casting and lighter galvanizing coatings) have also been developed. Slow but solid annual growth of 1.5-2.5% is anticipated through 1995. With the summer's supply disruptions behind us, Zinc's near-term outlook includes further weakening in demand and easing prices, as its primary markets (autos, appliances and construction) struggle to break free from recessionary conditions.

Slow, stable demand for zinc

Over the past 15 years, environmental concerns, new substitutes and a decline in the number of industries using the metal all worked to dampen zinc's strong growth during the 1960s. Analysts expect the industry's transitional period, however, to pay dividends for years to come. Zinc applications have been expanded with more and more steel sheets and sur-

Octane costs altering demand

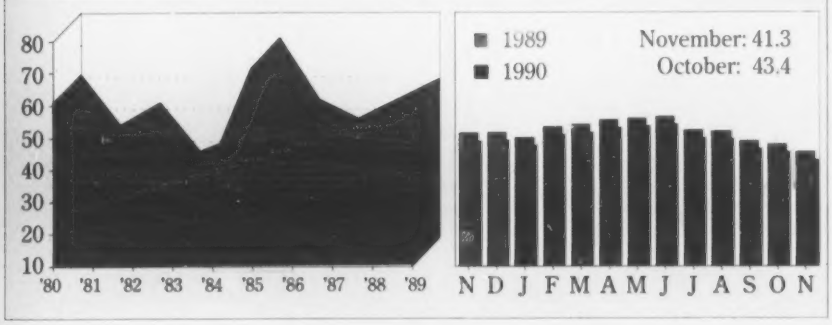
Higher prices at the pump are motivating consumers to turn away from expensive premium gasoline and fill their tanks with regular unleaded fuel. The demand shift is weakening the hydrocarbons market, with the prices for MTBE (methyl *tert*-butyl ether), toluene and mixed xylenes all falling. The spot price for toluene has dropped 25¢ to $1.15/gal.

BUSINESS DATATRAK

By John Sheridan, chief economic editor

N. A. P. M. business barometer

Based on five indicators (employment, inventories, new orders, production, vendor performance)



KEY ECONOMIC TRENDS

The foolish and the sensible

The signs of recession are highly visible now that its probability is topping 90%. Does this mean a recession must come to pass? No. Only the foolish, however, would not include in their strategic plan a recession-based scenario.

The trouble is, the sensible who are developing such plans, while promoting their own self interest, may as a result of their collective actions, increase the probability of recession for the economy as a whole.

In game theory, economists develop mathematical models which capture the decision-making of economic agents, based on rational expectations. It can be shown that when the chance of recession is 50% or higher, and given the probability and expected returns of alternative decisions, businesses will undertake actions in preparation of recession. Such actions include: postponing investments; reducing new orders and decreasing production in order to keep inventories in line; undertaking new cost reduction programs (slashing expense accounts); pushing back repayment schedules; and possibly cutting back employment—all activities which, when collectively followed, are detrimental to the continuation of economic growth.

Consumers are economic agents too, and their actions are also altered by recession concerns. Since consumer spending is roughly two-thirds of gross national product (GNP), retrenchment here is extremely significant.

This is the reason why so many economists 1) are confident that a recession is underway; 2) feel the third-quarter GNP number is an aberration (a data anomaly not representative of current market conditions); 3) put so much emphasis on more recent—and more dismal—statistics, such as consumer sentiment and help-wanted advertising (see chart).

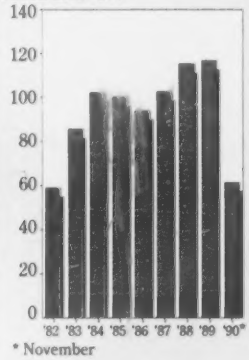
Despite all this, some of us are keeping the faith. When business cycles start down the road to recession, a number of counter measures exist. Aggregate demand can be stabilized by altering fiscal or monetary policy, or from an external shock (German unification, which could boost export demand, or falling oil prices, which would reduce costs throughout the system).

Fortunately, the recent budget accord eliminates the worst of these possibil-

Leading Indicators

Consumer attitudes

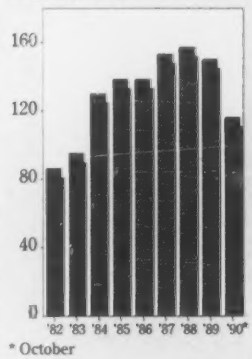
Index 1985=100



* November

Help-wanted advertising

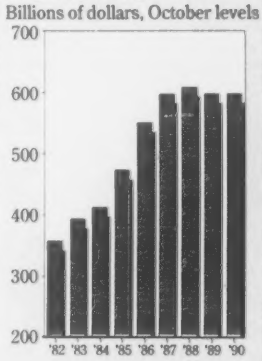
Index 1967=100



* October

Total reserves

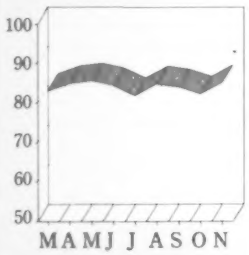
Billions of dollars, October levels



Source: The Conference Board; The Board of Governors.

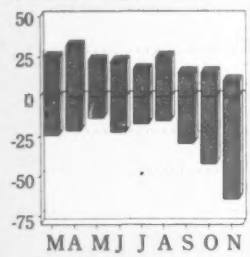
Steel

Operating rates

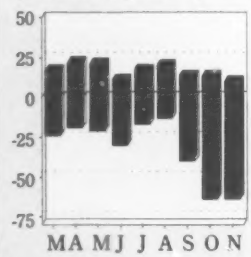


Inventories
(months supply on hand)

Demand (Steel Service Centers)
(Percent of respondents)



Demand (NAPM)
(Percent of respondents)



Source: Steel Service Center Institute
NAPM Steel Buyers Committee

ities—the increase of government spending. And while many of my colleagues argue that the Federal Reserve is currently limited in the discretion it can bring to bear, the level of total reserves in the system suggests differently (see chart).

While the Fed has recently lowered the federal funds rate, this is only one piece of the puzzle. If banks tighten their lending policies, or the demand for credit declines, a lower fed funds rate becomes a relative issue.

What total reserves are telling us is that the Fed must ease more. Here's why: if reserves grow faster than output (too much money chasing too few goods), the result is inflation; if reserves grow less than output, the result is deflation. Unfortunately, what accompanies this type of deflation is recession, which is the reality we are quickly approaching.

METALS SCENE

Weakness intensifies

October's average daily shipping rate (ADSR) in the steel service center industry plunged 6.8%. None of the seven product classifications escaped month-to-month declines: carbon flat roll, -5.9%; carbon plate, -4.7%; carbon bars, -8.9%; carbon tubing, -12.3%: carbon structurals, -6.9%; stainless 2.4%, and alloy 5.3%.

Steel Service Center Institute (SSCI) President Andrew G. Sharkey pointed out, "The declines in these carbon product categories are the most significant across-the-board declines this year, indicating that a slow-down may have begun in the capital goods market." Since capital goods were largely responsible for the strong performance of steel service centers through the first nine months of 1990, the slowing carbon product market could prove critical.

While the year-over-year shipping rate remains up 0.8%, October's ADSR was off 3.4% from its year-ago level. Last year, however, nearly all of the seven product classifications improved in the fourth quarter. This year, it's relatively assured that the performance of steel service centers in the last quarter of the year will fall below 1990's third-quarter level.

In the SSCI's latest monthly report, 60% of the members polled now expect incoming orders to decrease during the next three months. It's been over two years since such a bearish outlook surfaced. Another concern for SSCI members is that customers are beginning to extend payment schedules.

Inventories remain a source of good news. In October, service centers possessed 3.15 months of shipments on hand. This compares favorably to both previous month (September 3.60) and year-ago levels (October 1989 3.32).

Nickel: The late-summer price surge was primarily due to the New Caledonia supply disruption, which stimulated a roughly $1.50/lb firming in nickel's price, to $5.30/lb in late August. The recent price erosion has nickel now trading between $4-4.50/lb.

Nickel supplies are falling, suggesting upward pressure on prices. Global nickel stocks are now at a less than two-month supply, which is quite low when compared to historic levels of 3-5 months. Many leading producers are also in the process of cutting back production (Inco, Falconbrigde, Timmins, Pacific Metals, Sumitomo and Falcondo) with the combined loss of Western World supplies equaling 6%.

Despite tightening domestic supplies, however, the intensifying end-market downturn (the steel industry represents 60% of total demand) should incite an easing of demand, sufficient enough to keep nickel prices in the low $4/lb range, or lower, through mid-year.

Import prices
(Compared to domestic)

STEEL BUYERS
ABOVE 25%
SAME 34%
SLIGHTLY BELOW 41%
SUBSTANTIALLY BELOW 0%
SERVICE CENTERS (CARBON)
ABOVE 2%
SAME 69%
5-10% BELOW 29%
11-20% BELOW 0%
OVER 20% BELOW 0%

REGIONAL PERSPECTIVE

Fed survey pessimistic

The latest "Beigebook" indicates that economic activity has slipped further in most of the 12 Federal Reserve Districts.

Industrial activity: Manufacturers in the First District (Boston) report that sales in late 1990 continued to exceed year-ago levels, but new orders have begun to slow noticeably. A number of firms in the New England region have revised capital spending appropriations downward for 1991, with nearly all investment going toward new equipment, aimed at enhancing productivity.

The Second District (New York) and the Third District (Philadelphia) didn't escape deterioration either. Unemployment has risen more than one-half percent in New York since August, and both production and working hours are being scaled back. Many firms in the region expect the slowing trend of new orders to continue through winter.

In the Fourth District (Cleveland), manufacturing is trying to offset the drag being applied by a slowdown in both retail sales and loan activity. While most of the survey respondents don't feel that the region is in recession, they are growing uneasy about near-term prospects. Manufacturing employment in Ohio is still only slightly below its early 1989 peak, and output from the manufacturing sector remains steady.

Manufacturers in the Fifth District (Richmond) cited higher raw material costs as a problem, mainly because weak-end markets are preventing them from raising the prices of finished products to the same degree. The outlook of those surveyed has grown more pessimistic, with only a few expecting conditions to improve in the next six months.

Oil and defense-related industries are doing well in the Sixth District (Atlanta). Military apparel producers are now running at capacity, while military high-tech orders are also up significantly since September. Orders for the majority of firms producing goods for the private sector, however, are slowing.

District Seven (Chicago) manufacturing still shows signs of expansion, with steel and industrial equipment output offsetting new softness in auto, electronic component and agricultural equipment production. No increase in steel order cancellations has been reported.

Production slowdowns and layoffs at durable goods operations in the Eighth District (St. Louis) are stagnating business performance there. Much of the problem is due to the trickle down from auto and construction orders, which have been cut severely. A primary aluminum producer says that no drop in orders is surfacing, while nondurable producers also say that orders are stable.

Manufacturing performance in the Ninth District (Minneapolis) is said to be mixed, with computer and electronic firms struggling in recession-like conditions. Sales by aircraft industry suppliers, however, were up 30% in late 1990 on a year-ago basis, with no fall-off expected. Medical instrument producers, the defense industries and ordinance suppliers all remain sectors of strength in this region.

The economy is still moving forward in the Tenth District (Kansas City), but energy costs are a concern. Fuel prices are pushing up costs across the board, i.e., production, packaging and transportation. Many firms are making an effort to reduce inventories in anticipation of slowing sales.

Production and orders have fallen in the Eleventh District (Dallas), but sectors of strength remain. Firms dependent upon the construction sector are struggling and softness is also very visible for apparel, electronic components, lumber and wood products, and fabricated metals. Production is strong, however, in the steel, petrochemical and personal computer fields. An uptick in demand for oil-related machinery is also being observed.

Manufacturing employment and attitudes are declining in the Twelfth District (San Francisco). While the boom in the commercial air industry continues in the northwest, inventories by many other producers are perceived to be too high, raising concern. Job losses from California's major defense-related contractors and unemployment due to inventory correction are expected to keep manufacturing employment in this region moving down for some time.

Retail sales: Only the Chicago district is experiencing an uptick in sales, with all other districts reporting slower or falling sales growth. While most retailers believe inventories are at acceptable levels, some have begun cautiously trimming stocks. Many of the respondents said they are very worried about the near-term performance of consumer sales, hinting that significantly discounted prices might be necessary to keep merchandise moving.

Construction and real estate: Building activity has clearly slowed in all regions, with more stringent financing criteria and previous overbuilding existing as the major impediments.

Financial: Lending standards are said to be tightening in nearly all areas of the country. Many bankers now feel that a credit squeeze is affecting small businesses and consumers. Total loan demand is flat to down in all regions of the country.

CURRENT PRICES

Oil hardens "soft landing"

Iraq's invasion of Kuwait has shot down the Federal Reserve's soft landing strategy on economic growth. Soaring oil prices have created the worst-case scenario of falling output and rising costs—at the same time.

In a recent study by the Federal Reserve Bank of Cleveland, empirical evidence seems to indicate that the ability of the economy to "ride out a long-lived energy price shock has improved substantially since the oil crisis of 1974." Since 1973, industrial output has risen 50%, while the sector's usage of petroleum has dropped 9%. Despite the fact that energy efficiency is up 55% in the industrial sector and 37% in the economy overall, higher crude oil prices are slowing business activity while simultaneously inciting rising levels of inflation and unemployment.

With respect to prices, the authors point out that it is the negative shock applied to output that allows rising oil costs to incite a pervasive acceleration of inflation. They argue that unless the level of money in the system is reduced, more money will be chasing fewer goods after an oil shock, thus promoting a rise in the general level of prices.

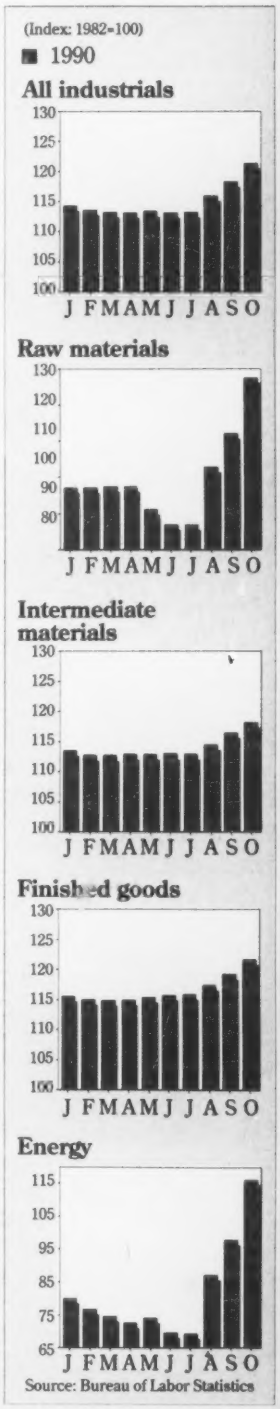
One should remember, however, that while the oil shock may have pushed the economy off the growth cliff, it was restrictive monetary policy during the previous two years that raised our vulnerability (see DataTrak lead story). Given that inflation is a long-run phenomenon, short-run monetary discretion aimed at stimulating demand would diminish the current level of uncertainty which has pushed our economy into a "meaningful downturn."

This month's breakdown

Index 1982=100

	Latest level	month ago	year ago
Bearings	130.7	0.0	4.1
Bolts, nuts, etc.	116.5	-0.9	1.6
Chemicals, inorganic	112.7	0.4	1.8
Chemicals, organic	119.9	4.0	6.8
Concrete products	114.2	0.2	2.3
Corrugated containers	107.5	-0.2	-4.4
Cutting tools, small	113.4	0.3	1.4
Electrical lamps (bulbs)	130.7	0.0	4.1
Electronic components	117.6	0.2	-1.9
Fans and blowers	124.6	0.3	3.7
Foundry and forge products	117.5	0.0	2.0
Fuel oil (residual)	72.1	21.6	49.6
Furniture, commercial	134.4	0.5	2.9
Gasoline	98.1	6.2	50.2
Glass, flat	106.6	-0.2	-2.8
Glass containers	121.0	0.1	4.6
Gypsum products	103.2	0.1	-5.8
Hand tools	135.4	0.1	4.9
Hand tools, power driven	121.6	0.0	3.9
Industrial furnaces	128.2	0.3	2.4
Integrating and measuring instruments	127.3	0.0	3.8
Internal combustion engines	121.4	0.0	4.3
Lubricating oil	125.9	6.8	12.3
Lumber millwork	130.6	0.1	1.9
Material handling equipment	115.9	0.1	2.6
Metal containers	114.0	-0.2	0.9
Metal mill shapes	134.5	1.9	-1.8
Metal tanks	114.4	0.4	2.4
Metalworking machines	124.1	0.6	4.0
Motors and generators	132.9	-0.2	2.1
Motor trucks	123.7	5.0	3.9
Nonferrous metals	139.9	0.6	-0.2
Office and store equipment	108.8	0.1	-1.3
Paperboard	133.9	0.6	-4.2
Paper boxes and shipping containers	129.3	0.0	-1.3
Paper office supplies	121.9	0.4	0.2
Paint	126.0	0.5	4.1
Plastic resins	125.1	1.2	0.3
Precision measuring tools	129.2	0.3	3.1
Pumps and compressors	120.3	0.2	3.5
Refactories	123.0	0.1	2.8
Rubber belts and belting	121.6	2.4	3.7
Scales and balances	109.6	0.2	2.6
Switch gear	125.8	0.4	5.1
Textiles, synthetic fibers	106.3	-0.9	-0.7
Textiles, gray fabrics	116.7	-0.4	0.2
Tires and tubes	97.3	0.2	0.1
Transformers and power regulations	121.8	0.2	1.9
Welding equipment	129.2	0.4	5.4
Wire and cable	147.3	0.7	-1.3

Industrial prices



Source: Bureau of Labor Statistics

PROCUREMENT

Little doubt now

It seems improbable that the economy didn't experience negative growth last quarter. Both major forewarning indexes (the Purchasing Managers Index and the Government's index of leading indicators) have been sounding the recession alarm since July, which is enough to convince even the most optimistic of economists. The question now is, will the economy snap back in early 1991, or continue to unwind, snowballing from a mild recession into a severe one?

According to the latest Report on Business from the National Association of Purchasing Managers (NAPM), November was the fifth straight month of decline for the domestic economy. Worse yet, the 41.3% level is the lowest the Purchasing Managers Index (PMI) has stood since the trough of the last recession.

Robert J. Bretz, chairman of the NAPM's Business survey committee, commented that "If the PMI remains unchanged at the November level for December, then past experience indicates this would be consistent with real GNP growth of approximately 0.9% for all of 1990 and a decline in the fourth quarter real GNP of approximately 0.6%."

Raising concern that the economy's current correction hasn't stopped unwinding is the level of new orders (see chart), which continues to descend. November's reading of 39.4 is the fifth consecutive drop, and is the lowest level since May 1982, which was the 10th month of the last recession.

New export orders continue to display strength, as expected, but appear to be more than offset by production and employment declines. A number of NAPM respondents said activities aimed at reducing employment were underway, including: layoffs, plant closings, reductions through attrition, hiring freezes and early retirement.

Heating oil

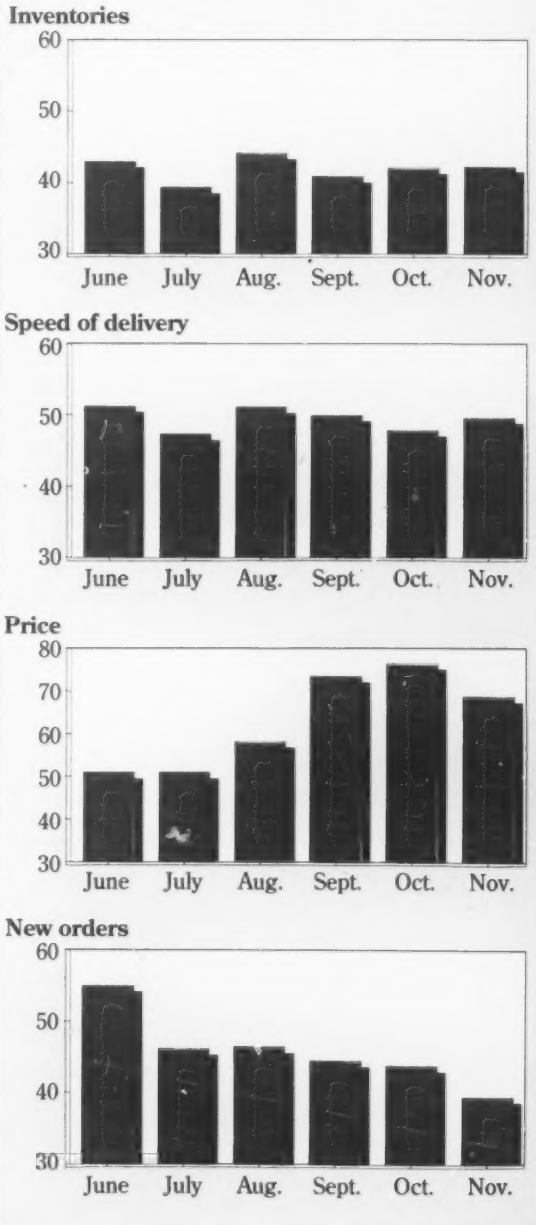
During the past two winters, the United States consumed more than 1.5 million barrels per day (mb/d) of heating oil. Businesses, industries and more than 11 million homes rely on heating oil to generate warmth or produce electricity.

With winter upon us, and the Middle East commotion persisting, concern is being raised over heating oil's supply. Last winter, the coldest temperatures since 1895 swept across the central and northeastern U.S., creating a sudden surge in demand. While this winter has been more tame—thus

NAPM procurement trends

(Seasonally adjusted diffusion indexes)

An index where 50 is defined as the neutral level, to the extent a reading is above 50, it represents an expansionary tendency. More particularly, rising inventory, prices, and new orders are seen as positive signs of economic growth. A trend towards lower deliveries is similarly interpreted.



far—no supply shortages are expected even if temperatures drop severely.

A triad of sources supply heating oil's end-markets: domestic refinery production, inventories and imports. Assuming normal temperatures this winter, the Department of Energy estimates that domestic consumption of distillate fuel (which includes heating oil and diesel fuel) will approach 3.5 mb/d. This is well below the potential 3.8 mb/d the American Petroleum Institute estimates that the U.S. petroleum industry can supply. Two other reasons make the possibility of shortage remote: 1) even if production falls short, inventories at the beginning of the winter were at historically high levels 2) if necessary, domestic companies can bid in the world market for additional heating oil.

Despite an adequate supply, prices have moved higher since Iraq's invasion of Kuwait last August 2, due primarily to speculation over crude oil. This differs from the experience of the 1980s, when competition and declining petroleum prices led to lower heating oil costs. While heating oil's retail price plunged nearly 50% between September 1981 and September 1989, the price has soared roughly 40¢ per gallon ($1.30) since Hussein's aggression.

LATEST SPOT MARKET PRICES

	Latest price	Previous month	Year ago
FERROUS METALS			
Steel, bars, stainless, 303, cwt	188.00	188.00	179.00
Steel, bars, HR carbon, 1000 series, cwt	19.20	19.20	21.00
Steel, bars, HR carbon alloy, cwt	25.00	25.00	24.50
Steel, bars, CF carbon 12L14, cwt	34.00	34.00	34.50
Steel, plates, carbon, cwt	24.25	24.25	25.20
Steel, plates, strip mill, cwt	23.60	23.60	23.60
Steel, plates, alloy, cwt	34.05	34.05	34.55
Steel, sheets, C.R., class 1, cwt	30.65	30.65	29.65
Steel, sheets, HR, cwt	23.00	23.00	22.25
Steel, sheets, stainless, 304, cwt	124.00	124.00	124.00
Steel, strip, HR carbon, cwt	22.10	22.10	22.10
Steel, strip, CR carbon, cwt	36.18	36.18	38.30
NONFERROUS METALS			
Aluminum, unalloyed ingot, lb	0.71	0.80	0.82
Aluminum, alloyed ingot, 355, lb	0.94	1.10	0.95
Aluminum, secondary ingot, 380, 30000 lb lot	0.71	0.75	0.73
Antimony, lb, merchant	0.85	0.88	0.95
Cadmium, N.Y., dealer, lb	1.20	2.20	4.60
Copper, electrolytic wire bars, lb	1.23	1.29	1.19
Copper, cathode, full plate, lb	1.16	1.21	1.10
Gold, N.Y., troy oz	384.85	379.50	402.90
Lead, common, N.Y., lb	0.38	0.41	0.42
Magnesium, pig ingot, (99.8%), lb	1.63	1.63	1.63
Mercury, 50 fl. lots, N.Y., fl.	185.00	205.00	270.00
Molybdenum, oxide, canned, lb	3.35	3.35	3.32
Nickel, cathode, dealer, lb	3.77	3.98	5.85
Platinum, dealer, oz	418.00	429.00	494.00
Silver, N.Y., troy oz	4.10	4.20	5.20
Tin, N.Y., dealer, lb	2.63	2.97	4.38
Zinc, high grade, lb	0.70	0.65	0.82
Zinc, die casting alloy, No. 3, lb	0.78	0.78	0.74
PAPER (unit=ton)			
Uncoated book #3 offset	940.00	940.00	940.00
Uncoated bond #4, 83 bright	900.00	940.00	900.00
Watermarked bond, 20 lb sheets	1090.00	1090.00	1095.00
Unbleached kraft paper, grocery bag, 30 lb	660.00	630.00	660.00
Bleached kraft, grocery bag, 30 lb	800.00	800.00	800.00
Solid bleached kraft paperboard, folding	830.00	830.00	830.00
Kraft linerboard, 42 lb, domestic, East	370.00	370.00	410.00
Newsprint, 30 lb, East	565.00	565.00	540.00
TEXTILES (unit=lb)			
Acrylic, open-end spun, 1/18, unbranded	1.74	1.50	1.84
Carded cotton, ring-spun, 18/1	1.56	1.58	1.61
Carded cotton, open-end spun, 18/1	1.35	1.43	1.40
Combed cotton, ring-spun, 100%, 18/1	1.75	1.75	1.85
Nylon, textured, 70/2	2.70	2.70	2.45
Polyester, 50/50% carded cotton, 30/1	1.77	1.89	1.87
Polyester, ring-spun, 100%, 16/1, unbranded	1.48	1.53	1.58
Rayon, high-wet modulus	1.48	1.48	1.30
CHEMICALS			
Acrylonitrile, tanks, lb	0.36	0.35	0.40
Ammonia, anhydrous, tankcars, ton	125.00	115.00	123.00
Benzene, gal	2.00	2.15	1.50
Caustic soda, metric ton	335.00	355.00	320.00
Cresylic acid (over 25%), tanks, lb	0.60	0.60	0.55
Formaldehyde, 37%, (12%-15% meth.),, tanks, lb	0.12	0.14	0.11
Glycerine, synthetic, 96%, tanks, lb	0.76	0.76	0.79
Methanol, syn., barges, Gulf Coast, gal	0.47	0.45	0.50
Naphthalene, crude, tanks, lb	0.20	0.17	0.16
Phthalic anhydride, molten, tanks, lb	0.51	0.54	0.41
Polyethylene resin, low density, lb	0.48	0.48	0.52
Polypropylene, homo-injection, lb	0.49	0.46	0.51
Polystyrene, general purpose grade, lb	0.58	0.61	0.59
Polyvinyl chloride, pipe grade, lb	0.36	0.36	0.44
Soda ash, light 58%, 100 lb, paper bags	160.00	155.00	135.00
Styrene monomer, 99.6%, tanks, lb	0.48	0.45	0.49
Sulfur, dark, Tampa, FL, long-ton	140.00	140.00	142.00
Sulfuric acid, 66%, commercial, tanks, ton	69.89	69.89	66.86
Titanium dioxide, anatase, reg., carlots lb	0.99	0.99	0.95
Xylene, Gulf Coast, spot, barge, gal	1.50	1.51	0.95
BUILDING MATERIALS			
Lumber, 2x4 fir, mbf, cl	323.35	337.24	345.63
Lumber 2x4 pine, mbf, cl	315.38	329.35	321.47
Plyform, 3/4", msf, cl	595.80	609.81	570.00
Plywood, 5/8", msf, cl	361.95	365.49	360.21
Cement, type 1, bulk, ton	62.10	62.44	63.88
Sand, concrete, ton, cl	6.87	6.86	7.17
Ready-mix concrete, 3000 psi/cu. yd.	49.65	49.43	48.81
Crushed stone, base course, ton, cl	6.18	6.13	5.84
Concrete blocks, sand/gravel, 8"x8"x16",, per hundred	84.47	84.58	87.17
Reinforcing bars, grade 60; per cwt.	21.71	21.96	22.10
Asphalt paving AC-20, ton	122.72	112.07	108.53
Concrete sewer pipe, 24", per ft, cl	17.79	17.94	18.00
FUELS			
Crude oil (W. TX Int.), bbl	30.25	35.50	20.40
Diesel (reseller rack, Chi.), gal	0.90	0.95	0.51
Heating oil No. 2 (N.Y.), gal, spot	0.86	0.90	0.56
Heating oil No. 2 (Gulf spot), gal, spot	0.84	0.89	0.48
Fuel oil No. 6 (N.Y.), tank car contract	23.35	26.90	18.75
Gasoline (prem unled N.Y.), gal, spot	0.80	1.02	0.78
Gasoline (reg unled N.Y.), gal, spot	0.78	1.01	0.59
Kerosene (reseller rack, Chi.), gal	1.00	1.07	0.60
SCRAP MATERIALS			
Aluminum, old sheet & cast, cl	0.42	0.45	0.43
Aluminum, mixed clips, cl	0.49	0.52	0.50
Brass, yellow solids, cl	0.62	0.60	0.57
Copper, No. 1, brass ingot makers', cl	0.97	1.01	0.93
Copper, No. 2, brass ingot makers', cl	0.87	0.91	0.84
Steel, no. 1, hvy.; dlvd.; Pitts., ton	105.00	109.00	99.00
Steel, no. 1, hvy., dlvd., Chi., ton	105.00	112.00	108.00
Zinc, old, smelters scrap, cl	0.30	0.30	0.35
Zinc, die cast slab, smelters scrap, cl	0.36	0.36	0.37

Sources: Metals Week, American Metal Market, Engineering News-Record (20-city averages), America's Textiles International, Journal of Commerce, Chemical Marketing Reporter, Pulp and Paper Week.

* This page has been revised to better serve you.

Snapback or unwinding: A Look at 1991

The major uncertainty overhanging the economy at the moment is clearly the resolution of the Mideast Crisis. What has happened so far has already *almost* guaranteed at least a minor recession; what happens from here on may lead either to a swift snapback or "cumulative unwinding" of economic activity. Since the time that elapses between writing and publication is dangerously long when measured relative to the pace of recent events, it is imperative to spell out our *assumptions* about oil prices.

We assume that the average price paid by U.S. refiners for foreign oil will fall from $34.00 per barrel in the fourth quarter of 1990 to $24.74 by yearend 1991, as compared to the below-$16 price which existed in the second quarter of 1990. The magnitude of this "shock," when account is taken of the current importance of energy in the overall economy, is still less than that of OPEC I (1974-75) or OPEC II (1980-82). What is important to understand, however, is that the shock was applied to an economy that was already weakening; in the fifteen months to the second quarter of 1990, real GNP grew at an annual rate of only 1.2%.

(Growth rates except where stated)

	1990	1991
Real GNP	1.0	-0.2
Consumer spending	1.1	-0.3
Business fixed investment	1.3	-0.9
Government spending	2.6	-0.7
Exports	5.3	4.3
Imports	2.8	-1.4
Industrial production	1.3	-1.7
Housing starts (mill)	1.22	1.15
Car sales (mill)	9.5	8.7
GNP deflator (implicit)	4.1	3.7
Consumer price index	5.5	5.0
Producer prices-finished goods	5.2	5.2
Federal deficit ($ bill)	220.0	276.0
Merchandise trade deficit ($ bill)	106.0	104.0
Unemployment rate (%)	5.5	6.8
Prime rate	10.0	9.2

Source: DRI

Consumer confidence went south immediately following the Kuwait invasion, and the unemployment rate has risen to 5.7% from 5.2% in June. It is therefore highly likely that consumer spending was weak enough in the fourth quarter of 1990 to cause overall output to fall. And growth is likely to be close to nonexistent in the first half of this year as consumers bring their spending back into line with real income growth.

Beyond mid-year the sky looks a little brighter. By that time oil prices should be coming down, which will contribute to a very good inflation performance (price gains elsewhere will be moderate because of the weakness of the economy). Interest rates will be lower than they are now— the prime rate, for example, should fall to 9.0%, which will be good for the interest-sensitive sectors of the economy. In particular, housing surely has room to cease being a drag on the economy, and will then provide some impetus to growth.

Most importantly, the recent weakness of the dollar should cause export growth to continue to be fairly strong, while import growth may come to a grinding halt because of both weak demand and poor relative price performance.

Finally, the inventory cycle that accompanies all recessions will eventually be over, and just the resumption of accumulation will add some strength to the economy.

This short-lived recession will drive the unemployment rate up to a peak of 7.0% towards the middle of next year. This makes it a very mild episode compared with OPEC I and OPEC II, when employment rates peaked at 9.0% and 10.8% respectively, but about on par with the 1970 recession.

The reasons to expect a mild recession have been well rehearsed in the media in recent months. The three major elements that frequently precede recessions, are conspicuously absent. There is no

by Christopher N. Caton and Robert J. Brown, Jr.

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serious inventory overhang, no non-energy inflation problem, and monetary policy is less draconian.

A more severe recession is unquestionably possible. One school of thought says that debt service problems mean any economic weakness will be accompanied by a slew of corporate bankruptcies that will further drag the economy down. A higher or more prolonged peak in the price of oil would also considerably worsen the outlook. And there is also the nagging thought that traditional forecasters always expect forthcoming recessions to be relatively mild.

Table 1 gives details of DRI/McGraw-Hill's forecast for key economic indicators in 1991. Note that real GNP growth will be slightly negative, while disposable income will have its weakest year since 1974. Consumers will be hit by rising import prices and by an increasing tax burden. Consumer price inflation is relatively high, mainly because of the year-on-year effect of oil prices; by the end of the next year inflation should be back below 4.0%.

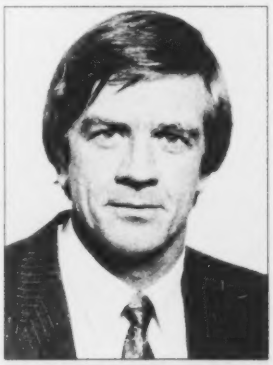
Note that the fundamental problems remain. The merchandise trade deficit ceased to improve, remaining above $100 billion, while the federal deficit hangs above $275 billion in fiscal 1991, and recall that this was the year in which the original Gramm-Rudman-Hollings legislation called for budget balance.

The industrial sector is likely to fare poorly; the fastest-growing markets for goods will be overseas rather than domestic, so companies with substantial markets abroad will do well. Total industrial production should fall by 1.7%, which implies that manufacturing employment will continue its long slide that began in January 1989.

Inflation outlook: The price inflation prospects for the coming year will be defined by two major influences: the recent surge in oil prices and the weakness of the U.S. economy. These factors work at odds with each other so that there is no clear picture of the path of inflation in the aggregate. The slowdown in economic activity is already taking its toll on labor markets—the U.S. civilian unemployment rate has risen from 5.2% to 5.7% in the latter half of 1990 and is projected to remain above 6.0% throughout 1991—restraining wage gains in the coming year and reducing upward pressure on prices from labor costs.

The overriding influence will come from the demand side. While the rise in oil prices has certainly had an immediate impact on inflation of energy-intensive goods, the impact will be short-lived, with prices retreating as a negotiated settlement in the Middle East is completed. Because the increase in oil prices takes the form of a temporary spike rather than a sustained increase, it will not affect production costs to any great extent. For example, the price index for energy and related products follows its 1990 increase of 14.1% with another jump of 15.4%, while the price index for non-energy industrial commodities rises just 3.7% in 1991 after an even smaller 2.1% rise in 1990. Not surprisingly, highly energy-intensive products such as chemicals and plastics will be among the most rapidly escalating products in the coming year. The aggregate chemicals price index rises 7.1% in 1991 and the plastics and rubber products price index rises 3.0%. In 1990, both of these indexes rose less than 1.0%.

The weakness in demand that has already affected the construction and automobile industries will spread to much of the manufacturing and service sectors in the final quarter of 1990 and the first quarter of 1991. Building materials prices are quite seriously affected by the demise of the residential construction industry. After averaging increases of almost 6.0% per year between 1987 and 1989, lumber prices eased to a 2.5% gain in 1990 and will then decline to 0.6% in 1991. Concrete product prices do not slow



down to the same extent, due in part to higher energy costs and a slightly stronger nonresidential building sector.

Inflation at the consumer level will be more robust than at the producer level, a result of strong increases in the prices for energy and medical care. Even when the volatile food and energy sectors are excluded from the inflation calculations, consumer price inflation (4.7% in 1991) exceeds that at the producer level (3.7%). Energy prices will again be the fastest-rising component of the CPI, posting a 12.8% gain in 1991. Better weather in the last year translates into better growing conditions and, hence, modest food price increases; the 3.9% increase projected in 1991 for consumer food prices is the smallest since 1988. ***PW***

Econometric models need interpretation

When economists build models, they put together a mathematical argument based on historical data. Unfortunately, the weights associated with each of the model's input variables don't, in real life, remain constant. Because anecdotal evidence reflects key economic changes before such changes actually show up in the data, the country's best forecasters temper econometric models with personal judgement.

Nevertheless, models are excellent for attempting to assess many complex interrelationships, and for raising our awareness of future economic possibilities. Right now, the models are warning buyers to prepare for tough times. The WEFA, Merrill Lynch, and Laurence H. Meyer & Associates models all expect negative real output growth, as measured by inflation-adjusted gross national product (GNP), for at least two quarters. While all three models forecast the downturn to begin in the fourth quarter of 1990, their pessimism regarding duration does differ, with the most pessimistic predicting recessionary conditions through mid-year. With respect to the magnitude of the forthcoming correction being forecast, the models are relatively optimistic, projecting a milder-than-average recession.

Remember, however, that the output in the corresponding tables is highly sensitive to the Middle East commotion. If war breaks out, and production facilities are forced off line, our recession is likely to be more prolonged and painful than the models indicate. On the other hand, oil prices should quickly fall once the Iraqi turmoil is removed. In fact, with the threat to production facilities gone, current world reserves could send oil prices below their pre-invasion level, stimulating a period of substantial deflation (falling prices). This deflation scenario, if not eliminating recession, would certainly reduce its length and severity.

The researchers at Laurence H. Meyer & Associates, St. Louis, cite the potential for financial distress to deepen and prolong their model's recession projection. If financial troubles occur, bank failings will increase, further reducing the availability of credit. Worse yet, the ripple effect from this would induce short-sighted firms to cut back employment, in an attempt to service current debt levels.

According to the WEFA Group, Bala Cynwyd, PA, the need to attract foreign capital for U.S. deficit financing, along with the oil shock, limits the Federal Reserve's ability to lower interest rates. This, accompanied by the budget accord with its tax increases and expenditure cuts, leaves the domestic economy without an adequate counter-cyclical tool to offset recession, thus supporting their model's negative outlook.

If the negative economic growth figures forecast by the three models turn out to be true, then their projections for the other major economic variables should be relatively accurate as well.

Leading and coincident indicators suggest that the probability of recession is exceeding 90%. If, when the dust settles from Christmas we find that consumers have stayed on the sidelines, and the commotion from the middle East is still with us, the near-term prognosis for business activity will surely be one of unpleasantness. **PW**

Real gross national product
percent change

	91Q1	91Q2	91Q3	91Q4	91
Merrill Lynch	-1.6	0.4	2.6	2.9	-0.1
WEFA	-1.1	1.4	2.8	2.9	0.5
LHM&A*	-2.2	-0.7	2.7	3.7	0.8
Average	-1.6	0.4	2.7	3.2	0.4

*Laurence H. Meyer & Associates

Gross national product price deflator
percent change

	91Q1	91Q2	91Q3	91Q4	91
Merrill Lynch	5.5	4.2	3.5	3.8	4.7
WEFA	4.5	4.9	4.1	3.9	4.5
LHM&A	5.8	3.3	2.3	2.5	3.5
Average	5.3	4.1	3.3	3.4	4.2

Finished producer prices
percent change

	91Q1	91Q2	91Q3	91Q4	91
Merrill Lynch	5.5	4.2	3.5	3.8	4.7
WEFA	4.5	4.9	4.1	3.9	4.5
LHM&A	5.8	3.3	2.3	2.5	3.5
Average	5.3	4.1	3.3	3.4	4.2

Civilian unemployment rate
percent

	91Q1	91Q2	91Q3	91Q4	91
Merrill Lynch	6.3	6.6	6.8	6.8	6.6
WEFA	6.4	6.8	6.9	6.9	6.8
LHM&A	6.3	6.7	6.9	6.9	6.7
Average	6.3	6.7	6.9	6.9	6.7

By John W. Sheridan
Chief Economic Editor

Office equipment stars in economy's survival

The malady of slow growth is inciting domestic decay in many of the U.S.'s historically most important sectors: nonresidential construction, housing, autos and non-auto manufacturing. Despite this herculean drag, the Department of Commerce tells us that the economy has, to date, avoided recession. While the wind of recession is building, at least one shooting star will continue to pull the economy higher: office equipment.

In 1990, revenue growth from the U.S. computer and business equipment industry mirrored 1989's performance, when growth in excess of 10% was witnessed. Since 1970, double digit increases have been the norm, with only 1976's and 1986's performances falling short.

According to the Computer and Business Equipment Manufacturers Association (CBEMA), worldwide revenue from U.S. computer and business equipment advanced nearly 13% over the past 10 years, with the decade of the 1990s expected to record growth of almost 10%.

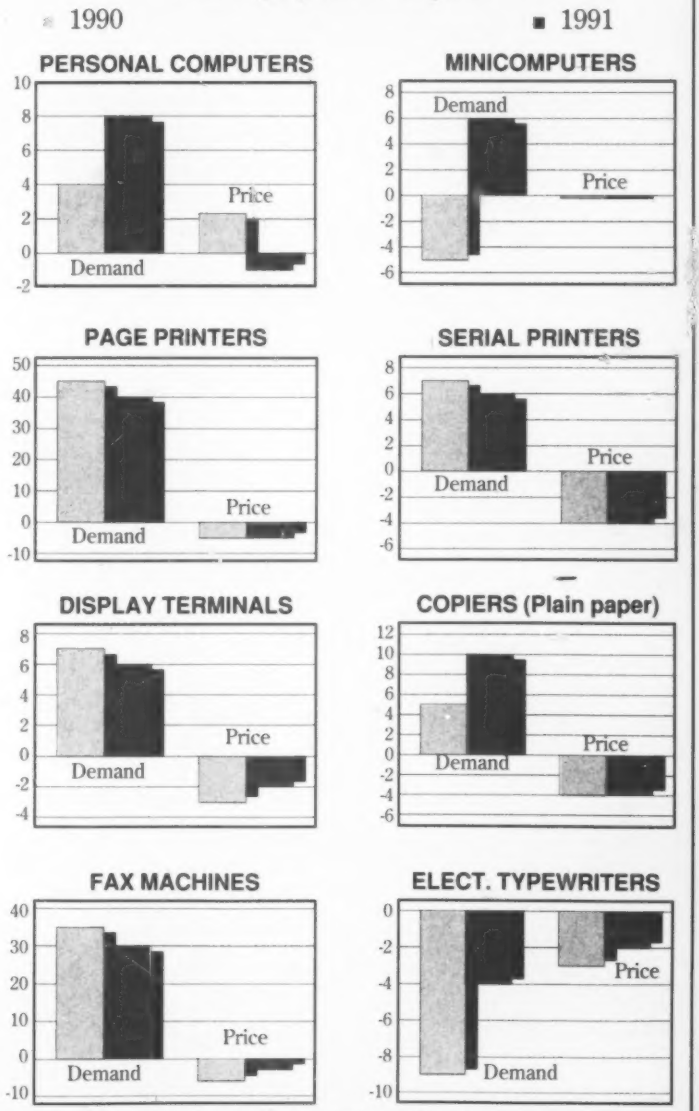
This strong prognosis stems partially from the recession-proof nature of office equipment. As long as business activity continues, information technology (which includes computer, business equipment and telecommunications) will be in demand, because it is one of the primary ways of raising productivity. Increasing productivity boosts profits, but more important, it enhances a firm's competitive position and long-run performance.

Within the computer and office equipment industry, software and services will remain the fastest growing sector (see chart). Accounting for

by John Sheridan
Chief Economic Editor

Business equipment trends:

% change year-over-year



Source: Computer & Business Equipment Manufacturers Assoc.

over 30% of total industry revenue in 1989, industry analysts believe the software and services market will experience double digit growth annually through the turn of the century, and account for 40% or more of the market in the year 2000.

With the exception of electronic typewriters, which PCs are quickly obsoleting, demand for office equipment remains healthy. Nevertheless, business equipment remains a buyer's market, both in product and price.

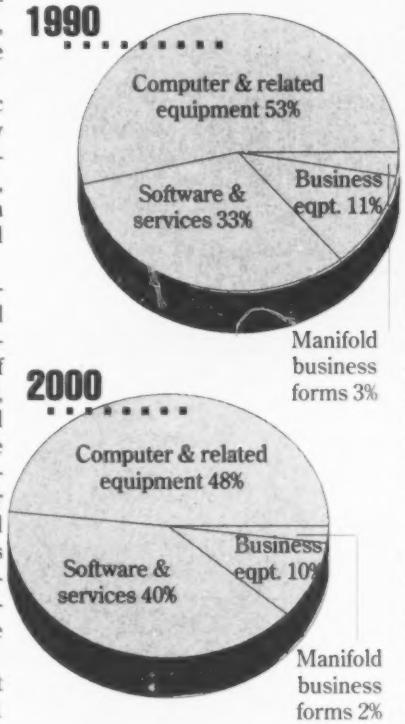
Lower-end product prices will continue to trend down as technological improvements persist in making desirable equipment obsolete. In fact, of the major office products researched, only personal computers displayed an average price rise last year (see chart). Moreover, these price declines are based on average cost per unit and do not reflect the improved performance that office equipment is delivering. Better still, in 1991, average tags for all of the office equipment surveyed are projected to be lower.

Specifically, here's what to expect in the way of average prices in 1991 for key office equipment products: personal computer ($2,384), minicomputer ($56,195), page printer ($3,900), serial printer ($595), display terminal ($1,640), plain paper office copier ($3,309), fax machine ($1,950) and electronic typewriter ($875).

On the demand side, extraordinary rates of growth are being displayed by fax machines and page printers (see chart), offsetting other product lines, most notably computers and copiers, which are currently slumping.

U.S. computer and business equipment industry

By major market segment



Computer demand in 1990 slowed considerably from 1989, when shipments pushed ahead over 10%. The 1990 advance will be lucky to hit 4%, but most of the drag came solely from minicomputers, which could have been off 5%. Some of this is the result of microcomputer advances, which have allowed micros to cannibalize some of the mini market. A rebound toward continued strength is expected to begin this year for all segments of the computer market, as CBEMA projects shipment growth in excess of 8% for the current decade.

As for plain paper copiers, shipments rose nearly 6% in 1989, but will probably finish 1990 up only 5%. The good news is that CBEMA looks for copier orders to jump 10% in 1991. Low-speed copiers are still dominating the market, accounting for 62% of plain paper office copiers.

The latest CBEMA study also makes some estimates for dictation equipment and calculators. 1989 was the seventh year in a row for increases in both revenue and shipments of dictation equipment. Growth in shipments, however, was less than 2% last year, with the average annual growth rate for the 1990s set at less than 1%.

Calculators, conversely, should continue to perform well. Only a 1986 sales dip blemishes an otherwise outstanding decade. Unit shipments of hand-held calculators rose over 4% in 1989 and now represent nearly 70% of the calculator market. While the average price for hand-held calculators stood at $32.61 in 1989, by the turn of the century that price is projected to fall into the neighborhood of $26. Sales during this same time span are anticipated to advance 3-4% per year.

Internationally, North America is far and away the dominant market for information technology (see table), but growing opportunities lay abroad, especially in the European, Russian and Asian markets.

The news regarding business equipment is clearly good, with the future looking to hold lower average prices, more selection and better quality. Newer, more efficient machines will continue to whet buyer appetites, with the domestic office equipment industry showing no signs of succumbing to a decelerating economy. Demand for information technology will continue to drive economic expansion in the United States, adding much-needed stability to a fragile economy. ***PW***

INFORMATION TECHNOLOGY

Worldwide geographic breakout, percent

	Computer equipment	Business equipment	Telecommunications equipment	Software
North American market	48	50	55	50
Asian market	14	9	9	16
European market	37	38	35	31
South & Central American market	1	3	1	2